AMENDMENTS TO THE CLAIMS

1. (currently amended): A bus arbitration method for a processor based system, the system comprising a link bus, said link bus comprising a link bus hub and a plurality of link bus segments, each link bus segment comprising a plurality of lines for communicating commands, addresses, data, and a <u>line for bi-directionally communicating a</u> single-bit link status signal, each link bus segment coupled to said link bus hub and one respective satellite device to form a point-to-point link between said link bus hub and respective satellite device, one of said respective satellite devices being a first device, a processor coupled to said hub device via a processor bus, and a memory device coupled to said link bus hub by a memory bus, <u>said bi-directional line configured to carry arbitration requests bi-directionally between said first device and another respective satellite device,</u> said method comprising the steps of:

> issuing, from one of the first device and the hub device, an arbitration request on a portion of said plurality of lines associated with said single-bit link status signal of the link bus;

> determining, at the first device and the hub device, whether control of the link bus can be transferred from a bus master to the device issuing the arbitration request; and

> if it is determined that control of the link bus can be transferred, transferring control of the link bus from the bus master to the device issuing the arbitration request, wherein control of the link bus is granted by the first device and the hub device.

2. (previously presented): The method of claim 1, wherein said determining step comprises:

inspecting an internal arbitration state and an internal status information; and

determining if control of the link bus can be transferred based on the inspected internal arbitration state and the inspected internal status information.

3. (previously presented) The method of claim 2, wherein the internal arbitration state comprises a current arbitration state selected from one of:

a park state indicating that there are no requests on the link bus,

a grant-self state indicating that a device in control of the link bus is transferring information on the link bus, and

a grant-other state indicating that another device is in control of the link bus.

4. (previously presented) The method of claim 2, wherein the internal status information comprises a current status value selected from one of:

a bus master arbitration request,

a bus master transfer in progress,

a bus slave arbitration request, and

a bus slave transfer in progress.

5. (currently amended) The method of claim 1, wherein said transferring step comprises:

       modifying an internal arbitration state and a<u>n</u> internal status information to reflect that the issuing device is a master of the link bus and that the other device connected to the link bus is a slave of the link bus.

6. (previously presented) The method of claim 5, wherein the internal arbitration state information comprises:

       a current arbitration state selected from one of a park state indicating that there are no requests on the link bus,

       a grant-self state indicating that a device in control of the link bus is transferring information on the link bus, and

       a grant-other state indicating that another device is in control of the link bus.

7. (previously presented) The method of claim 6, wherein said modifying step comprises:

       at the first device, changing the internal arbitration state to the grant-self state; and

       at the link bus hub, changing the internal arbitration state to the grant-other state.

8. (previously presented) The method of claim 6, wherein said modifying step comprises:

at the link bus hub, changing the internal arbitration state to the grant-self state; and

at the first device, changing the internal arbitration state to the grant-other state.

9. (previously presented) The method of claim 6, wherein said modifying step comprises:

at the first device, changing the internal arbitration state from the park state to the grant-self state; and

at the link bus hub, changing the internal arbitration state from the park state to the grant-other state.

10. (previously presented) The method of claim 6, wherein the internal status information comprises a current status value selected from one of:

a bus master arbitration request,

a bus master transfer in progress,

a bus slave arbitration request, and

5

a bus slave transfer in progress.

11. (original) The method of claim 10, wherein the internal arbitration state is changed from the park state to the grant-other state if the internal status reflects the bus master arbitration request and not the bus slave arbitration request.

12. (original) The method of claim 10, wherein the internal arbitration state is changed from the park state to the grant-self state if the internal status reflects the bus slave arbitration request.

13. (original) The method of claim 10, wherein the internal arbitration state is changed from the grant-self state to the grant-other state if the internal status reflects the bus slave arbitration request and not the bus slave transfer in progress state.

14. (original) The method of claim 10, wherein the internal arbitration state is changed from the grant-other state to the grant-self state if the internal status reflects the bus slave arbitration request and not the bus master transfer in progress state.

15. (original) The method of claim 10, wherein the internal arbitration state is changed from the grant-other state to the park state if the internal status does not reflect the bus

master arbitration request, the bus slave arbitration request and the bus master transfer in progress state.

16. (original) The method of claim 1, wherein the link bus comprises a link bus status line and said issuing step comprises propagating a signal on the link bus status line.

17. (original) The method of claim 1, wherein the link bus comprises a link bus status line and said issuing step comprises time multiplexing an arbitration request signal on the link bus status line.

18. (previously presented) The method of claim 1, wherein said issuing step through said transferring step are performed in accordance with a link bus protocol of the link bus.

19. (currently amended) A method of arbitrating control of a link bus of a computer system, the link bus comprising a link bus hub and a plurality of link bus segments, each link bus segment comprising a plurality of lines for communicating commands, addresses, data, and a <u>line for bi-directionally communicating a</u> single-bit link status signal, each link bus segment coupled to said link bus hub and one respective satellite device to form a point-to-point link between said link bus hub and respective satellite device, said hub device coupled to a processor of said computer system by a processor bus and coupled to a memory device of said computer system by a memory bus, <u>said</u>

bi-directional line configured to carry arbitration requests bi-directionally between one satellite device and another satellite device, the link bus being a source strobed bus, said method comprising the steps of:

time-multiplexing, from one of the satellite device and the hub device, an arbitration request signal on the single-bit link status line;

detecting, at the other of the satellite device and the hub device, the arbitration request signal;

determining, at the satellite device and the hub device, whether control of the link bus can be transferred from a bus master to the device issuing the arbitration request; and

if it is determined that control of the link bus can be transferred, transferring control of the link bus from the bus master to the device issuing the arbitration request, wherein control of the link bus is granted by the satellite device and the hub device.

20. (previously presented) The method of claim 19, wherein said determining step comprises:

inspecting an internal arbitration state and a status information contained on each of the satellite device and the hub device; and

determining if control of the link bus can be transferred based on the inspected internal arbitration state and status information.

21. (previously presented) The method of claim 20, wherein the internal arbitration state information comprises a current arbitration state selected from one of:

a park state indicating that there are no requests on the link bus,

a grant-self state indicating that a device in control of the link bus is transferring information on the link bus, and

a grant-other state indicating that another device is in control of the link bus.

22. (previously presented) The method of claim 20, wherein the internal status information comprises a current status value selected from one of a bus master arbitration request,

a bus master transfer in progress,

a bus slave arbitration request, and

a bus slave transfer in progress.

23. (previously presented) The method of claim 19, wherein said transferring step comprises:

modifying internal arbitration state and status information on each of the satellite device and the hub device to reflect that the issuing device is a master of the link bus and that the other device connected to the link bus is a slave of the link bus.

24. (previously presented) The method of claim 23, wherein the internal arbitration state information comprises a current arbitration state selected from one of:

      a park state,

      a grant-self state, and

      a grant-other state.

25. (original) The method of claim 24, wherein said modifying step comprises:

at the satellite device, changing the internal arbitration state to the grant-self state; and

at the hub device, changing the internal arbitration state to the grant-other state.

26. (original) The method of claim 24, wherein said modifying step comprises:

at the hub device, changing the internal arbitration state to the grant-self state; and

at the satellite device, changing the internal arbitration state to the grant-other state.

27. (original) The method of claim 24, wherein said modifying step comprises:

at the satellite device, changing the internal arbitration state from the park state to the grant-self state; and

at the hub device, changing the internal arbitration state from the park state to the grant-other state.

28. (previously presented) The method of claim 24, wherein the internal status information comprises a current status value selected from one of:

a bus master arbitration request,

a bus master transfer in progress,

a bus slave arbitration request, and

a bus slave transfer in progress.

29. (original) The method of claim 28, wherein the internal arbitration state is changed from the park state to the grant-other state if the internal status reflects the bus master arbitration request and not the bus slave arbitration request.

11

30. (original) The method of claim 28, wherein the internal arbitration state is changed from the park state to the grant-self state if the internal status reflects the bus slave arbitration request.

31. (original) The method of claim 28, wherein the internal arbitration state is changed from the grant-self state to the grant-other state if the internal status reflects the bus slave arbitration request and not the bus slave transfer in progress state.

32. (original) The method of claim 28, wherein the internal arbitration state is changed from the grant-other state to the grant-self state if the internal status reflects the bus slave arbitration request and not the bus master transfer in progress state.

33. (original) The method of claim 28, wherein the internal arbitration state is changed from the grant-other state to the park state if the internal status does not reflect the bus master arbitration request, the bus slave arbitration request and the bus master transfer in progress state.

34. (currently amended): A processor system comprising:

a processor;

a link bus, said link bus comprising a link bus hub and a plurality of link bus segments, each link bus segment comprising a plurality of lines for communicating commands,

12

addresses, data, and a <u>line for bi-directionally communicating a</u> single-bit link status signal, each link bus segment coupled to said link bus hub and one respective satellite device to form a point-to-point link between said link bus hub and respective satellite device, one of said respective satellite devices being a first device, said link bus hub being coupled to said processor via a processor bus<u>, said bi-directional line configured to carry arbitration requests bi-directionally between said first device and another respective satellite device;</u>

wherein said first device and said link hub arbitrate a control of said link bus by

issuing, from one of said satellite device and said link hub, an arbitration request on a portion of said plurality of lines associated with said single-bit link status signal of the link bus,

determining, at the satellite device and said link hub, whether control of said link bus can be transferred from a bus master to the device issuing the arbitration request, and

transferring control of said link bus from the bus master to the device issuing the arbitration request.

35. (original) The system of claim 34, wherein said satellite device and said link hub determine if control of said link bus should be transferred by inspecting respective internal arbitration state and status information, and determining if control of said link bus can be transferred based on said inspected internal arbitration state and status information.

13

36. (previously presented) The system of claim 35, wherein said internal arbitration state information comprises a current arbitration state selected from one of:

a park state indicating that there are no requests on the link bus,

a grant-self state indicating that a device in control of the link bus is transferring information on the link bus, and

a grant-other state indicating that another device is in control of the link bus.

37. (previously presented) The system of claim 35, wherein the internal status information comprises a current status value selected from one of:

a bus master arbitration request,

a bus master transfer in progress,

a bus slave arbitration request, and

a bus slave transfer in progress.

38. (original) The system of claim 34, wherein said link bus is a source strobed bus.

39. (cancel)

40. (previously presented) The system of claim 38, wherein said arbitration request is issued by time multiplexing an arbitration request signal on said_portion of said link bus associated with said single bit link status signal.

41. (previously presented) The system of claim 34, wherein said wherein said satellite device and said link hub transfer control of said link bus by modifying respective internal arbitration state and status information to reflect that the issuing device is a master of the link bus and that the other device connected to the link bus is a slave of the link bus.

42. (previously presented): The system of claim 41, wherein said internal arbitration state information comprises a current arbitration state selected from one of:

   a park state indicating that there are no requests on the link bus,

   a grant-self state indicating that a device in control of the link bus is transferring information on the link bus, and

   a grant-other state indicating that another device is in control of the link bus.

43. (original) The system of claim 42, wherein said satellite device modifies its internal arbitration state and status information by changing its internal arbitration state to the grant-self state, and wherein said link hub modifies its internal arbitration state and status information by changing its internal arbitration state to the grant-other state.

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44. (original) The system of claim 42, wherein said satellite device modifies its internal arbitration state and status information by changing its internal arbitration state to the grant-other state, and wherein said link hub modifies its internal arbitration state and status information by changing its internal arbitration state to the grant-self state.

45. (previously presented) The system of claim 42, wherein said internal status information comprises a current status value selected from one of a bus master arbitration request, bus master transfer in progress, bus slave arbitration request, and bus slave transfer in progress.

46. (previously presented) The system of claim 45, wherein said internal arbitration state is changed from the park state to the grant-other state if said internal status reflects the bus master arbitration request and not the bus slave arbitration request.

47. (previously presented) The system of claim 45, wherein said internal arbitration state is changed from the park state to the grant-self state if said internal status reflects the bus slave arbitration request.

16

48. (previously presented) The system of claim 45, wherein said internal arbitration state is changed from the grant-self state to the grant-other state if said internal status reflects the bus slave arbitration request and not the bus slave transfer in progress state.

49. (previously presented) The system of claim 45, wherein said internal arbitration state is changed from the grant-other state to the grant-self state if said internal status reflects the bus slave arbitration request and not the bus master transfer in progress state.

50. (previously presented) The system of claim 45, wherein said internal arbitration state is changed from the grant-other state to the park state if said internal status does not reflect the bus master arbitration request, the bus slave arbitration request and the bus master transfer in progress state.

51. (currently amended) A processor based system comprising:

a processor;

a link bus, said link bus comprising a link bus hub and a plurality of link bus segments, each link bus segment comprising a plurality of lines for communicating commands, addresses, data, and a <u>line for bi-directionally communicating a</u> single-bit link status signal, each link bus segment coupled to said link bus hub and one respective satellite device to form a point-to-point link between said link bus hub and respective satellite device, one of said respective satellite device being a first device, <u>said bi-directional line</u>

17

configured to carry arbitration requests bi-directionally between said first device and

another respective satellite device, said link bus hub being coupled to said processor via

a first bus;

wherein

said first device multiplexes an arbitration signal on a portion of said lines

associated with said single-bit link bus status signal in accordance with a link

bus protocol to become a master of said link bus during transmissions to said

link hub, and

said link bus hub multiplexes another arbitration signal on said portion of said

lines associated with said single-bit link bus status signal in accordance with said

link bus protocol to become a master of said link bus during transmissions to

said first device.

52. (original) The system of claim 51, wherein said link bus is a source strobed bus.

53. (original) The system of claim 51, wherein said link bus is a quad pumped source

strobed bus.

54. (original) The system of claim 51, wherein said link bus is a double pumped source

strobed bus.

55. (previously presented): The system of claim 51, wherein said arbitration signals are time multiplexed on said portion of said lines associated with said single-bit link bus status signal during a predetermined time window.

56. (previously presented) The system of claim 52, wherein said portion of said lines associated with said single-bit link bus status signal link bus status line is used to transmit status information between said link hub and said satellite device.

57-60. (cancel)